EXHIBIT L

REPORT FOR *AHERN v. SIG et al.*

Factual Background

On May 19, 2019, City of Cambridge Police Department (CPD) Detective Lieutenant Thomas R. Ahern (Lt. Ahern) and six other officers were inside a SWAT vehicle preparing for crowd control for the annual Mayfair near Harvard Square. Lt. Ahern, a SWAT commander with substantial firearms experience, was performing a routine function check of his Safariland Level 3 Retention Holster. The final attempt failed to secure the weapon, so he removed the firearm and was holding it in a safe and low position, with his right index finger along the slide, when his CPD issued Sig Sauer P320 (P320) discharged without a trigger pull.

The bullet struck Lt. Ahern's left thigh over his duty pants and deflected off a magnet on his cell phone that was inside his left pant pocket. After it ricocheted off his cell phone, it penetrated an equipment bag that was on the floor in the van before coming to rest in a ballistic helmet.

I was retained to inspect Lt. Ahern's pistol. It is my opinion that his P320 discharged without a trigger pull as in many other cases around the country. My qualifications and prior testimony are stated in exhibits to this report.

Analysis

1. On October 13, 2022, I was present at the North Star Imaging facility (NSI) in Marlboro, Massachusetts, along with engineer and Sig Sauer certified P320 armorer, Timothy Hicks, to observe a CT (Computer Topography) scan of a subject Sig Sauer P320 9mm semi-automatic pistol bearing serial number 58C728540 (Subject Pistol) that was previously issued to Lt. Ahern. We were also present to examine and photograph possible manufacturing and design defects of the Subject Pistol upon completion of the CT scan.

2. Also present to conduct the inspection and photography of the subject pistol was the Derrick Watkins, Sig Sauer's expert. The Subject Pistol was transported to the facility for inspection by CPD Officer Hector Vicente and Lieutenant Buck Yam.

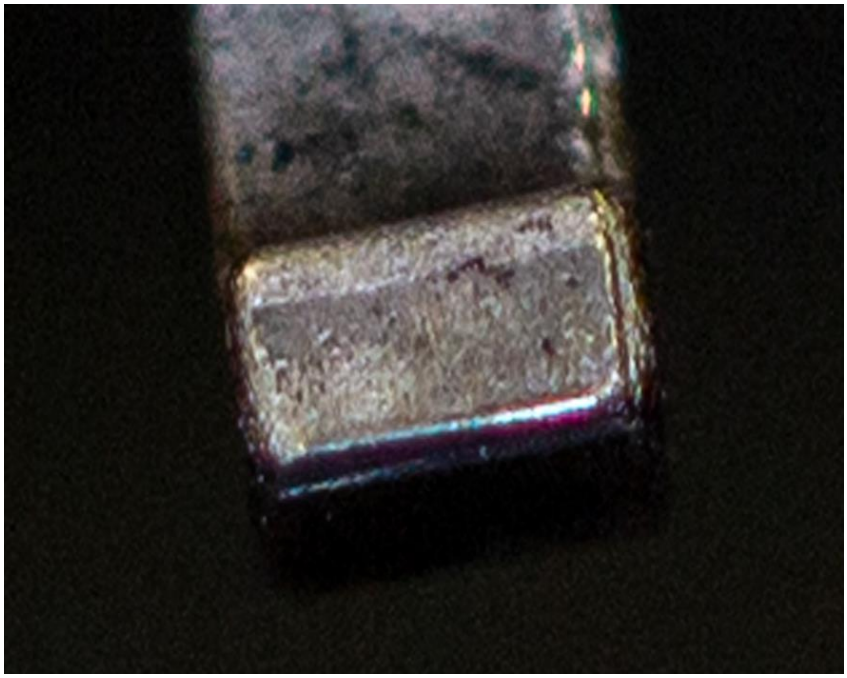
3. The Subject Pistol was removed from the evidence box by Mr. Watkins and a safety check was conducted by Mr. Watkins, me, and Mr. Hicks to determine that the pistol was unloaded. The pistol was then placed into the CT scanner to be examined by Mr. Watkins and the NSI staff.

4. Upon completion of the CT scan, Mr. Watkins began his examination and testing of the Subject Pistol by conducting the following tests:

- Function testing as per the agreed protocol
- Striker pin/primer test
- Safety lock test
- Striker function test
- Trigger weight test

5. During the examination of the Subject Pistol, photographs were taken by Mr. Watkins, Mr. Hicks and me. During my examination of the Subject Pistol, I found the following manufacturing defects:

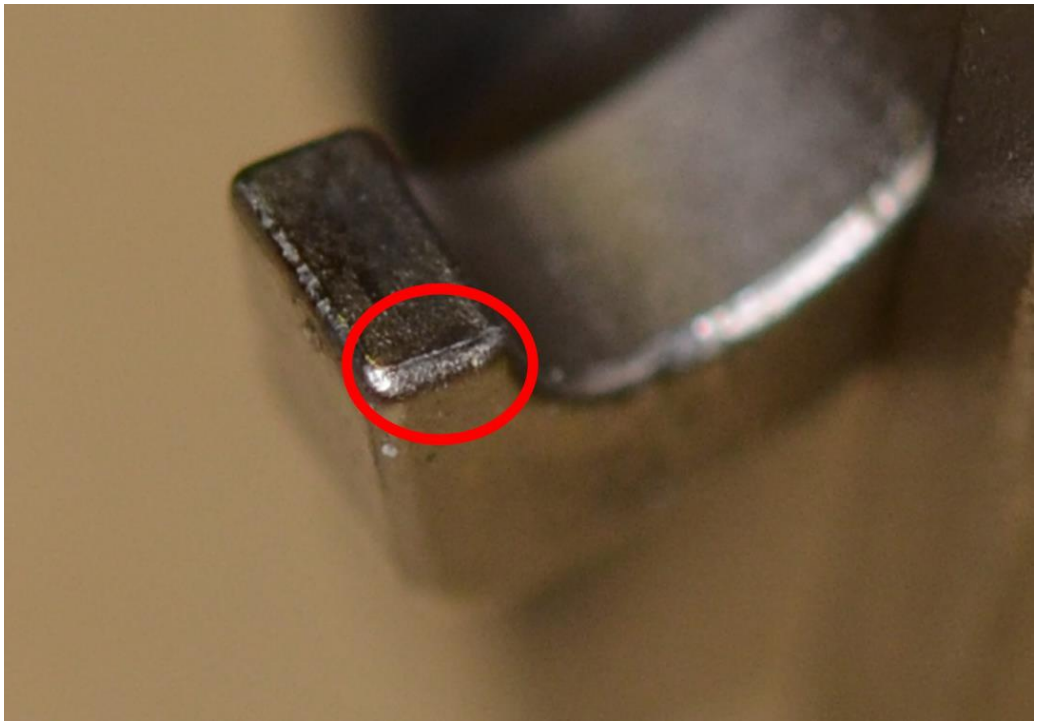
6. The striker foot showed raised excess molding material along the outer perimeter of its "positive contact" area. This results in minimal engagement between the positive contact surfaces of the striker foot and sear face. It is important to note that this connection is spring charged, that is, the striker is under constant spring pressure to move forward past the sear to impact the primer of the chambered round. Minimal surface contact between these two surfaces combined with the shallow engagement of these small metal parts renders them susceptible to an uncommanded discharge upon an inertial impact to the gun as minor as an "impulse" as Sig itself has admitted, as is discussed below.



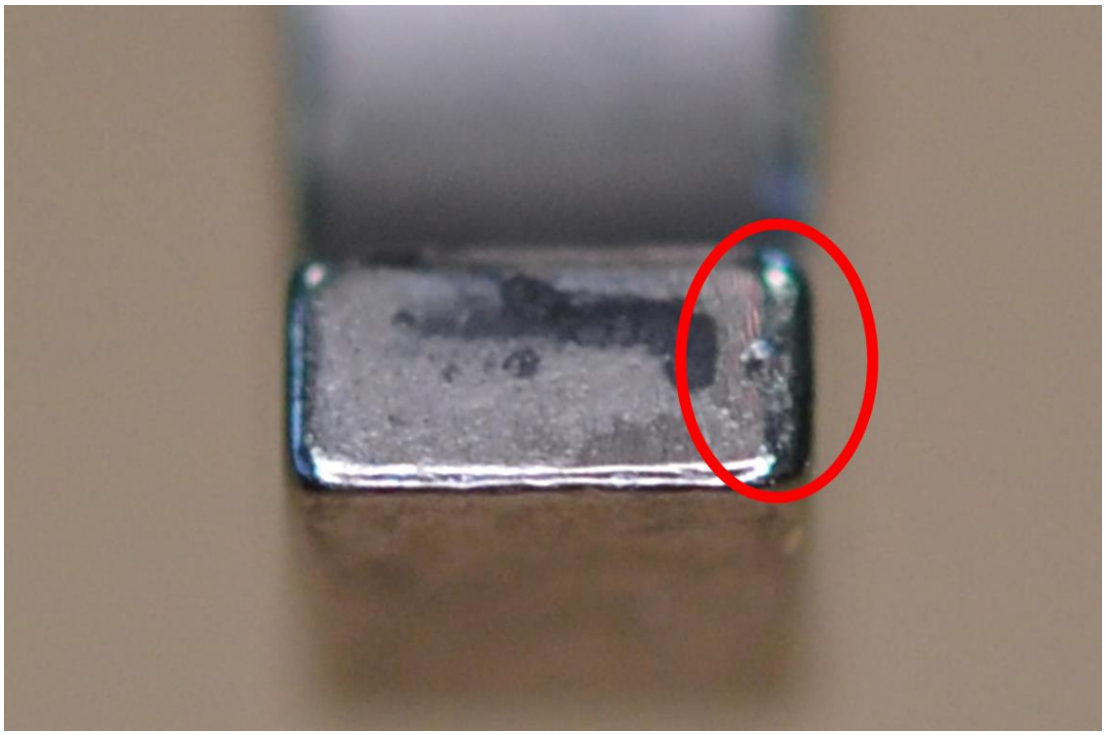
Ahern 0004E

7. The excess mold material present is consistent with several other striker foot examinations that I have conducted in previous cases as shown below.

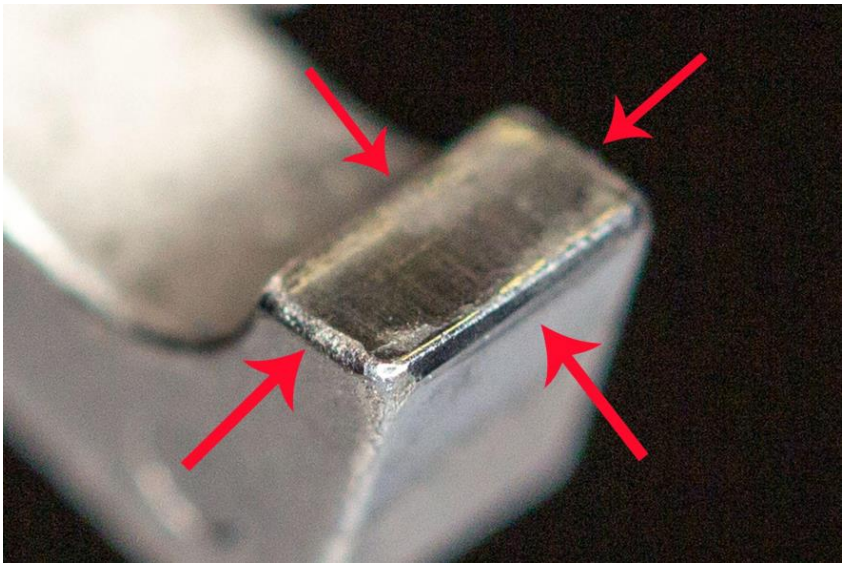
Jinn 0026E



Jinn 0024E



Perez 0028E



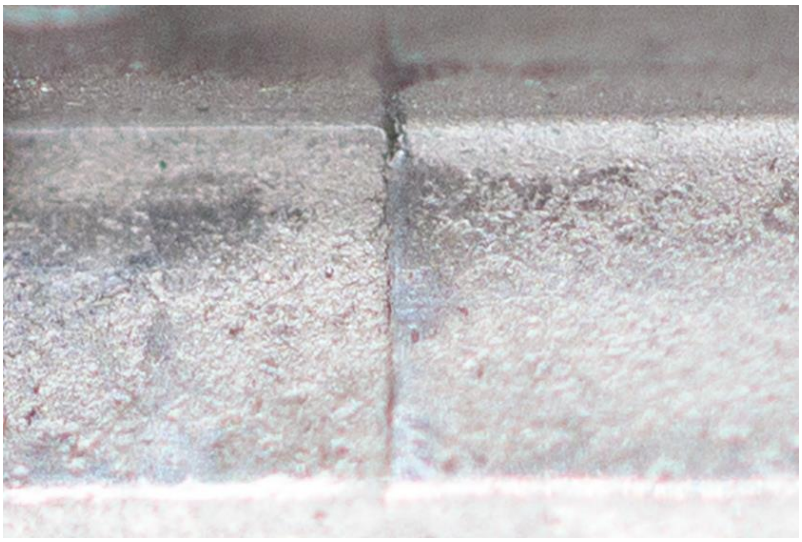
Hilton 0010E

8. This excess material should have been removed from this part prior to its installation during the production process.

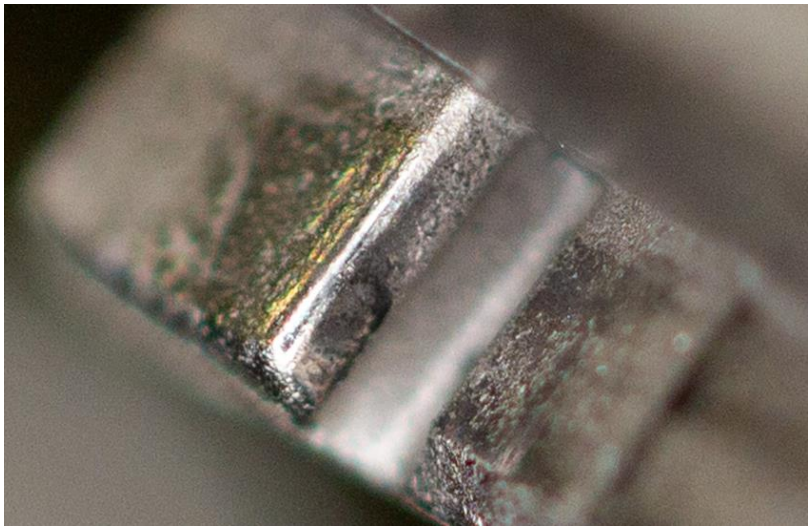
9. An examination of the striker body shows a molding defect along the vertical striker wall and horizontal plane of the body which shows a drag mark that can cause the safety lock tab to jump up and over the striker stop as the striker travels forward during an uncommanded discharge.

10. This area is the "positive contact surface" that is supposed to interface with the safety lock tab should the striker travel forward uncommanded.

11. The lack of a flat positive contact surface of the striker wall can cause the safety lock tab to not properly engage the wall which is designed to prevent an uncommanded discharge.

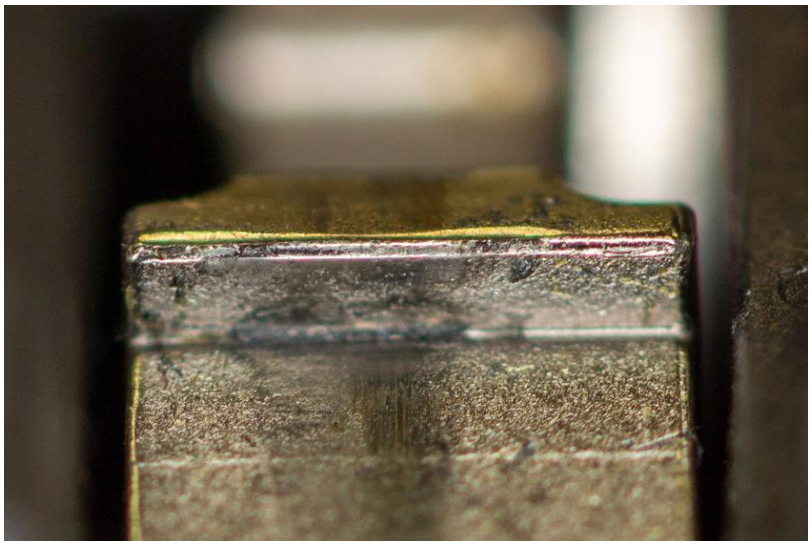


Ahern 0009E

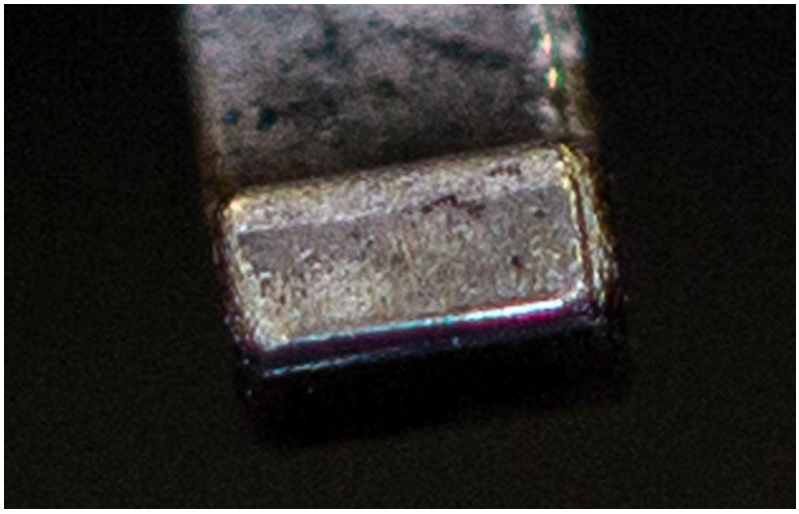


Ahern 0010E

12. Examination of the sear's "positive contact surface" also shows an uneven engagement surface.



Ahern 0022E

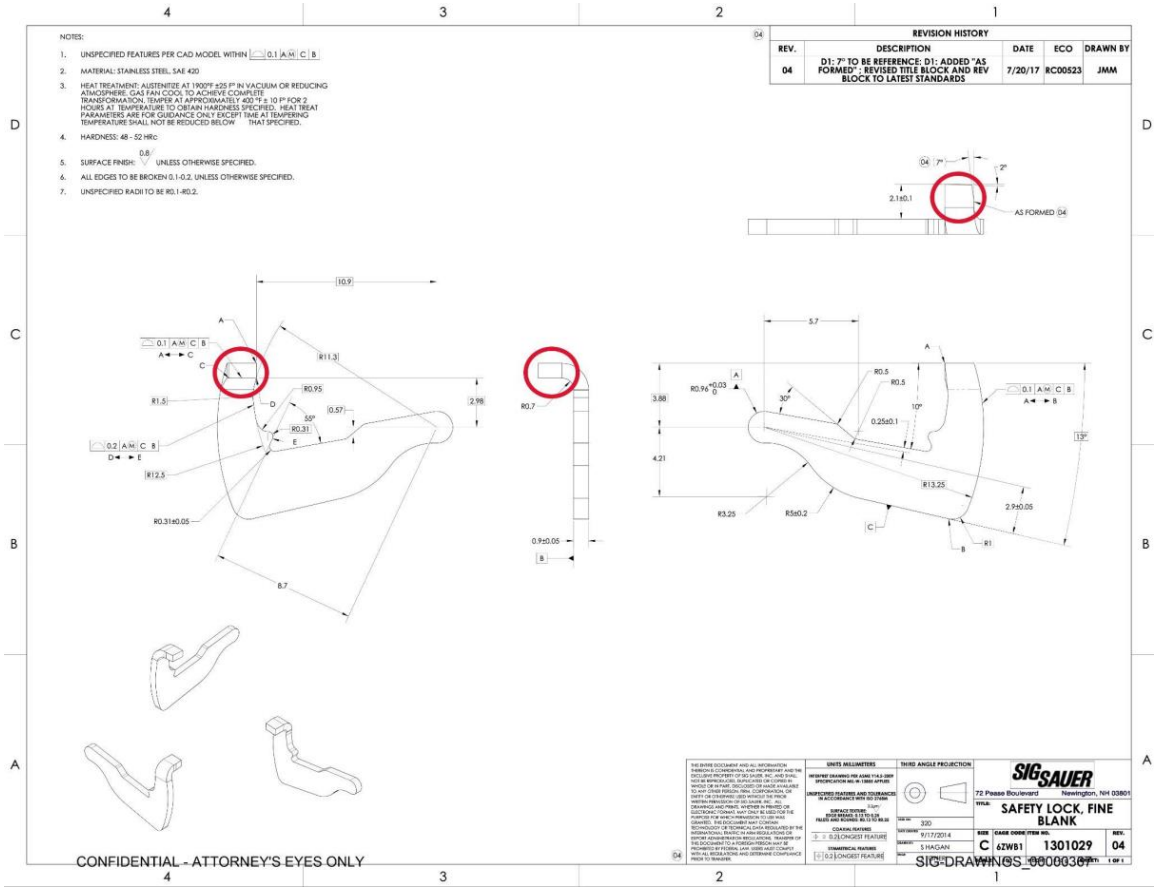


Ahern 0004E

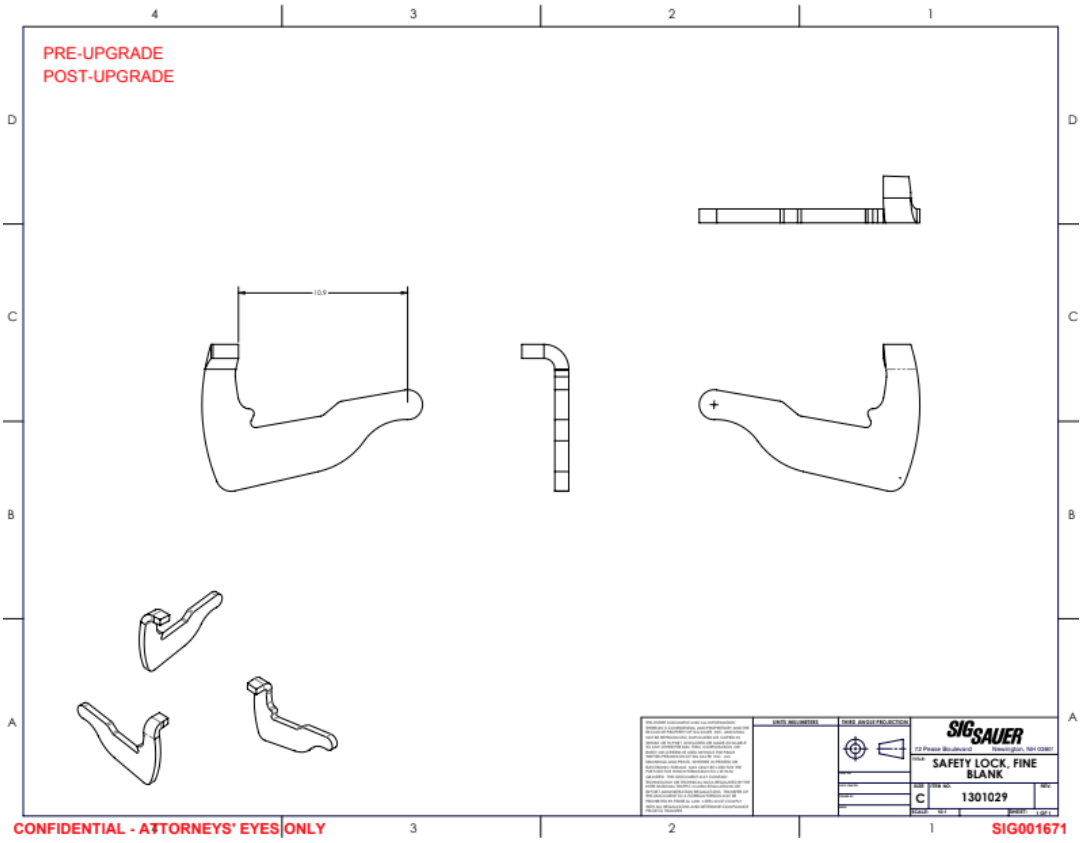
13. Having raised excess material along the top horizontal portion of the sear prevents its positive contact surface (blackened area 0022E) from properly engaging and fully contacting the striker foot interface (0004E). Examination of the striker foot also shows excess mold material along the lower horizontal edge and right vertical side which, combined with the excess material on the sear, can prevent the positive contact surface of both parts to be fully engaged.

After removing the safety lock from the striker assembly, I was able to see that the tab was deformed and did not match the drawings of Sig Sauer's provided engineers' plans (below).

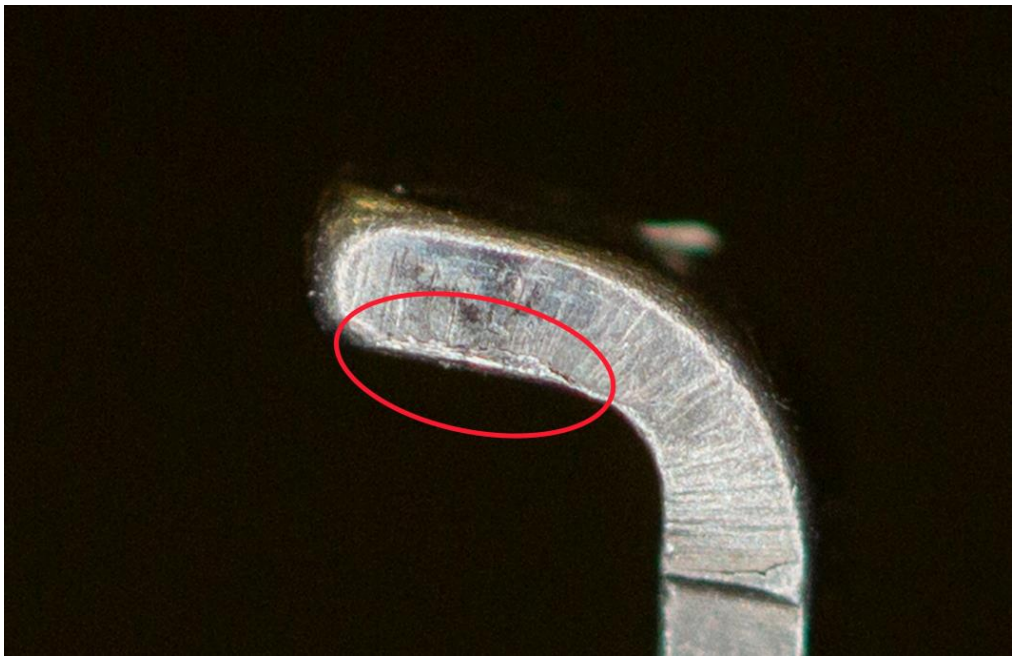
14. The safety lock is a stamped steel part where the tab portion is bent in a 90° turn horizontally to allow contact with the striker stop if the sear/striker engagement should fail. Also, along the bottom horizontal portion of the tab, there is an extended deformity protruding from the "positive contact surface" which again prevents a positive interface between the striker stop and safety lock tab should the sear/striker fail.



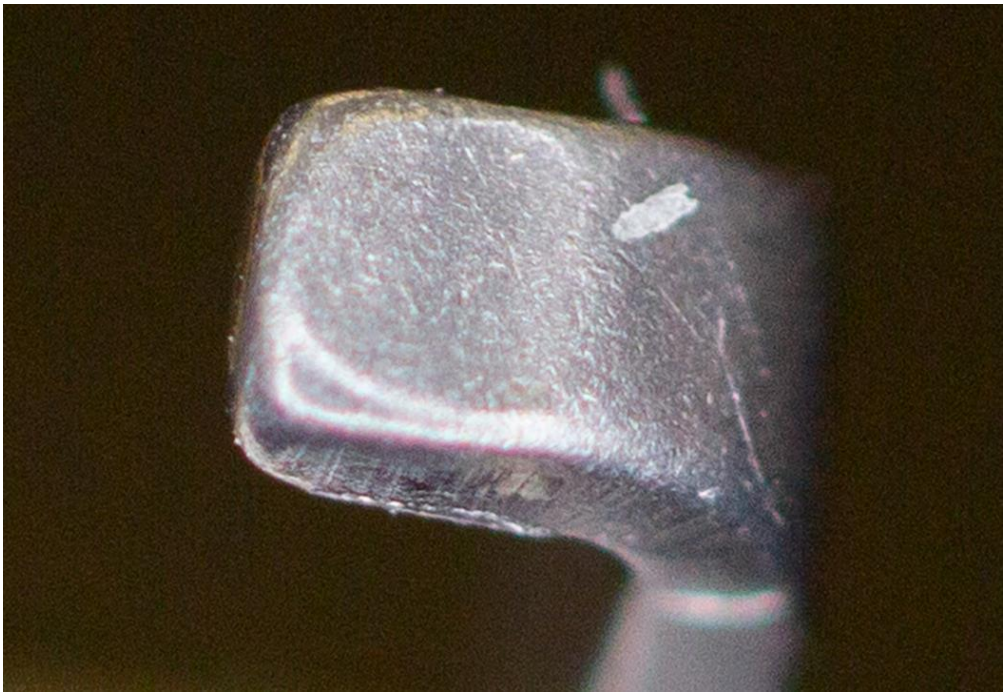
Sig Sauer official drawings of safety lock showing squared off and rectangular edging along the tab area (circled in red)



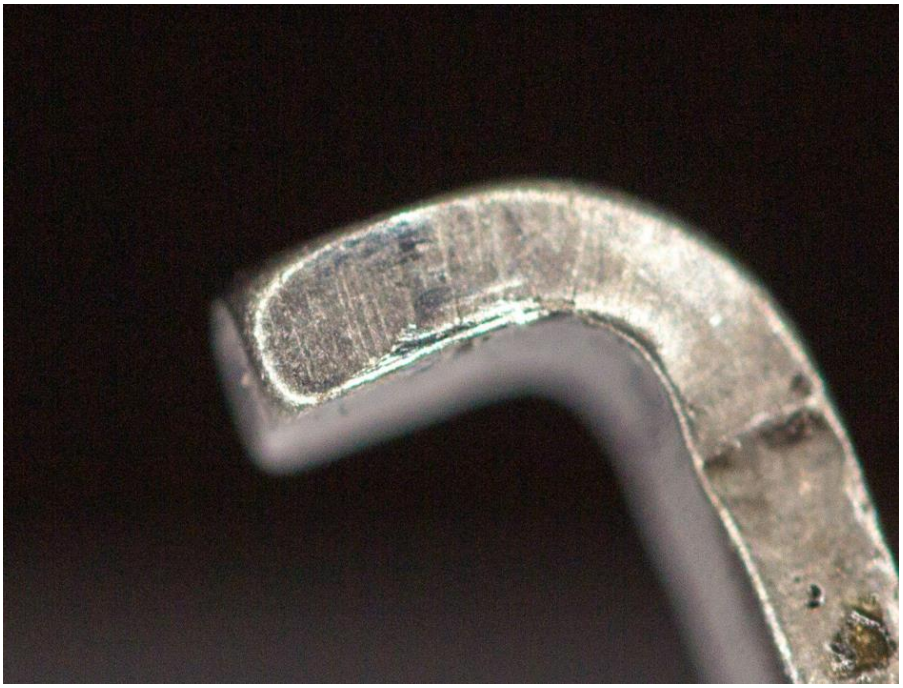
Sig Sauer official drawings of safety lock showing squared off and rectangular edging along the tab area



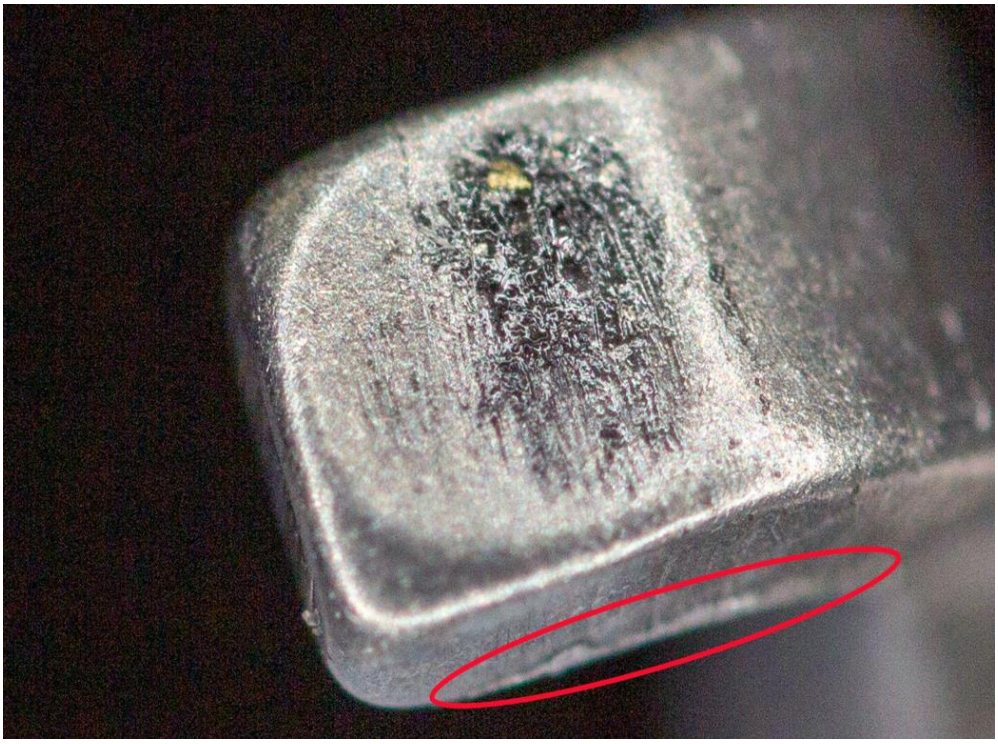
Ahern 0014E shows raised defect along bottom edge



Ahern 0017E (Top view of tab showing rounded edging)

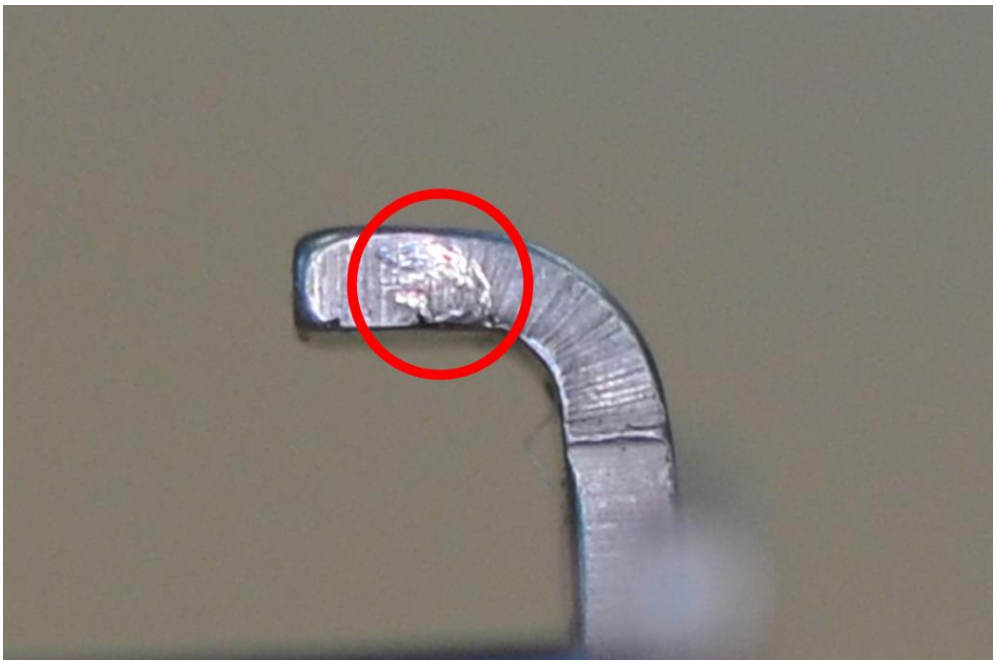


Hilton 0002 Raised edge of "Positive contact surface"

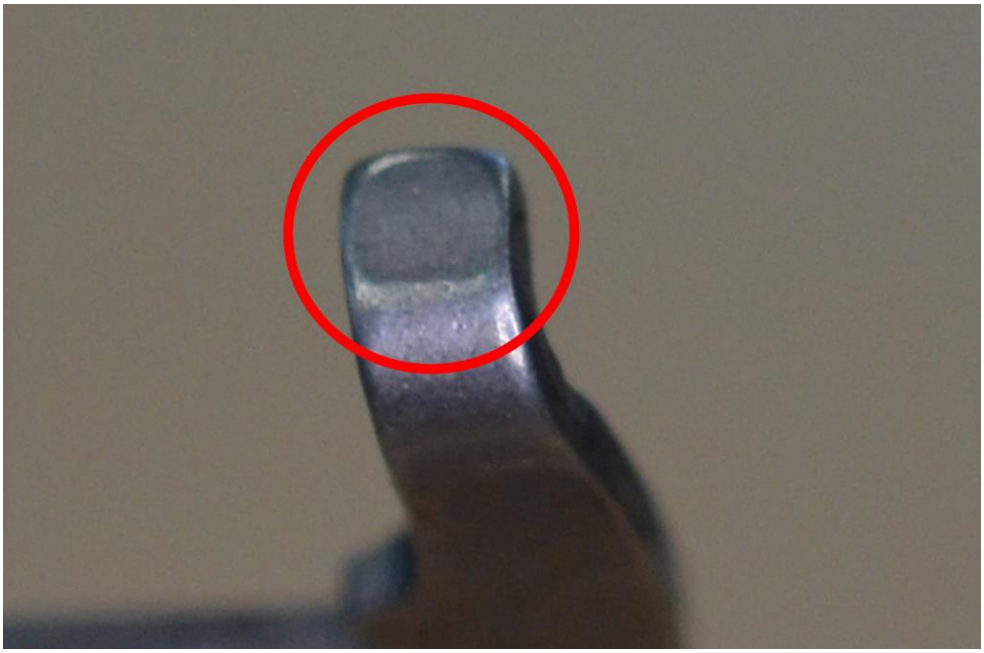


Hilton 0006

Hilton tab shares the same raised deformity along the bottom edge of the "positive contact" surface as Ahern (circled in red)



Perez 0032E Deformed bulge in center of tab



Perez 0034E Top view of tab showing rounded edging

Exemplar 58C101498 PIC 00070E Raised edging along perimeter of tab

Exemplar 58C183837 PIC 0083E Raised edging along perimeter of tab

Frankenberry 58B017511 PIC 0060E Totally deformed "positive contact surface" of tab showing raised surface and fracture of metal

Measurement chart

Striker Foot Height	**1.40 mm**
Striker Foot Width	**2.55 mm**
Sear Face Height	**1.30 mm**
Safety Lock Body Thickness	**.86 mm**
Safety Lock Tab Thickness	**.91 mm**
Slide End Cap Height	**18.39 mm**
Slide Rail Tabs (FCU)	
Left Rear	**1.95 mm**
Left Front	**1.72 mm**
Right Rear	**1.98 mm**
Right Front	**1.94 mm**
Slide Rail Gaps	
Left Side From Rear	**2.27 mm**
Right Side From Rear	**2.26 mm**
Striker Stop Wall Height	**.87 mm**

Evaluation of testing procedure by Sig Sauer Expert Derrick Watkins

15. Testing done by Mr. Watkins of the safety lock and firing pin test is flawed. He removed the slide from the grip module and placed the slide upside down on the table. While holding the slide down with his fingers of one hand and using his other hand, he pulled the striker foot rearward and then released it against the safety lock to show that it was functioning properly at that time. He then depressed the safety lock while releasing the striker foot again, allowing the blank cartridge containing clay to be struck by the pin end of the striker. This testing method is inconclusive. During actual uncommanded discharges, the P320 is not in a state of disassembly while being held

motionless on a tabletop. The test is unrealistic of the actual carrying conditions of the firearm in the real world.

Sig Sauer Testing

16. Sig Sauer subjected ten handpicked P320 models to private testing in October 2021 by a third party, paid contractor, Dayton Brown Associates. None of the tests included firearms secured within holsters. Nor did the testing simulate real world conditions of the P320 being worn or carried. Sean Toner, the lead team designer for the P320 for Sig Sauer, has testified by deposition that he does not know how to develop a test that would account for conditions during normal and expected usage. *See* Deposition of Sean Toner in *Frankenberry v Sig Sauer, Inc.*, 19-cv-02990, USDC, Dist. of South Carolina. The real-world conditions would include, but are not limited to:

- Walking, running, crawling,
- Getting into and out of a vehicle,
- Removing and inserting the firearm into a holster,
- Installing and removing a holster from a belt, with a firearm inserted,
- Chasing or apprehending suspects, and,
- The firearm being carried in a holster in a backpack or purse.[1]

CONCLUSION

17. My findings of these manufacturing defects along the internal parts (sear/striker foot/striker and body/safety lock tab), did within a reasonable degree of certainty, lead to an unintended discharge as the excess material viewed on these parts can cause a lack of positive contact between them. These defects have been a common discovery between all P320s that I have examined in previous cases. Also observed is the tolerance differences within the fire control unit body. The four corner slide rail tabs vary in thickness. The difference in height of these tabs within the slide rail grooves can cause the slide to move excessively. This allows the striker foot, which is contained within the striker housing, to move up and down, causing the striker to also move away from the sear interface. This excess motion, along with the deformity of the safety lock tab, can lead to an uncommanded discharge.

18. Sig Sauer's own component level drawings do not match the examined parts as seen in the safety lock tab actually installed in the P320s. If the parts were actually manufactured as designed, there would be a high probability that these parts would not cause an uncommanded discharge. Since Sig Sauer does not take the extra step during production in finishing these parts prior to

[1] I am also aware that there are well over two million P320s in circulation in the United States and elsewhere and testing a fair sample of this many guns would require the acquisition of at least 1,000 P320s at an approximate cost of $700,000 alone.

installation, the parts are being installed in a defective state. To alleviate the problem, a simple quality control review of the parts and finishing the "positive contact" surfaces appropriately as other firearms manufacturers do, such as Windham Weaponry and Smith and Wesson, as I have examined previously.

Sig Sauer's patent drawings state:

> **(0060)In contrast to releasing striker 16 by user action, such as pulling the trigger 30 or operating the takedown lever, *sear 100 can be inadvertently displaced in rare circumstances due to an impulse or sudden impact force.* The displacement of sear 100 can result in striker 16 disengaging from sear 100. After being displaced by the impulse, sear 100 is not retained in the displaced position, but instead returns after the impulse ends towards the cocked position due to the force of the sear spring(s) 28. For example, an impulse may have a duration of 0.05 second or less, such as about 0.0002 seconds or less, or even 0.0005 second, which is comparatively much shorter than displacement of sear 100 during a trigger pull (e.g., -0.1to 0.5 second or more) or other user action.**

Patent number US 20190107353A1 (April 11, 2019) at 5.

19. Sig Sauers own statement that "***sear 100 can be inadvertently displaced in rare circumstances due to an impulse or sudden impact force"*** is consistent with plaintiff's conclusion that any sudden shock, twisting, torquing, or striking can cause the striker's positive contact surface to disengage from the sear's positive contact surface. That Sig Sauer's patent also shows a secondary sear face was added to their "upgrade" to catch the uncommanded tripping of the striker foot proves that the primary sear may release the striker foot uncommanded. Also, because the sear and striker foot, which are MIM parts, are not finished to a flat surface, this unfinished irregular surface can lead the secondary sear interface to fail as neither "positive contact " surfaces actually make contact. Rather, only the imperfections of both parts make contact, which can cause failure of both sear interfaces.

20. Depending upon the amount of MIM defect of the positive contact surfaces, the firearm can become inoperable due to less recoil spring pressure as it now has been de-energized, since the face of the primary and secondary sear faces are approximately 6mm apart which may result in a light primer hit of the chambered round. The P320 was designed to be fully energized as it is a single-action striker fired handgun, and the striker needs to be in the fully cocked position. This now becomes a severe safety issue during a life-threatening situation as this condition will now cause the operator to conduct a clearance drill (TAP/RACK/ASSESS). Since the P320 is a striker fired system, you can't simply re-pull the trigger but must activate the slide to eject the non-fired

round and reload a fresh round to continue the engagement. Some hammer fired handguns can simply have the trigger pulled again.

22. My compensation rate is $300 per hour.

Date: December 1, 2023

/s/ Peter Villani
Peter Villani

Peter Villani
41 Maple Street
Cresskill, NJ 07626
908.413.7271
pete.villani@yahoo.com

Work History

2001 - Present	**United States Department of Veterans Affairs Police** **East Orange, NJ** Operations Officer (Major) Senior Firearms Instructor/Armorer Primary Evidence Custodian
1999 - 2001	**Rocco Dairy** **Cresskill, NJ** Operations Manager: Managed pizza delivery supply company
1995 - 1999	**World Class Shooters/Paterson Rod & Gun** **Hawthorne, NJ/Paterson, NJ** Range Manager/Firearms Sales/Instructor
1988 - 1995	**Passaic County Sheriff's Department** **Paterson, NJ** Sheriff's Officer
1986 - 1988	**North Haledon Police Department** **North Haledon, NJ** Class 2 Special Police Officer
1985 - 1988	**Willowbrook Mall Security Department** **Wayne, NJ** Security Supervisor (Sergeant)
1979 - 1985	**Paterson Pallet Company** **Paterson, NJ** Operations Manager

Peter D. Villani
Firearms Background

1979-PRESENT	International Practical Shooting Confederation (IPSC) shooter: Participated in pistol, rifle and shotgun matches
1986-2005	NRA Certified Pistol Safety Instructor: - Conducted pistol safety courses for beginners - Qualified civilian pistol permit carriers - Qualified retired Police Officers
1986	Attended Lethal Force Institute, Concorde NH Stress Fire Handgun Course
1986	Attended Lethal Force Institute, Concorde NH Advanced Combat Shotgun Course
1986	Attended Passaic County Police Academy Class Two Special Police Officer Basic Firearms Course
1989	Attended Morris County Police Academy Full Time Police Officer Basic Firearm Course
1995-1999	Employed as a Range Manager/Firearms salesman for World Class Shooters/Paterson Rod and Gun Hawthorne, NJ and Paterson, NJ - Responsible for employee hiring, scheduling, maintenance of range, civilian pistol instruction and qualification of retired law enforcement officers and civilian carry permit holders. - Responsible for firearm sales and all related paperwork involving registration records with the NJ State Police - Responsible for all firearms cleaning of customer firearms - Responsible for repair of customer firearms. - Evaluated personal gun collections for consignment sales - Worked with local prosecutors/attorneys in resale of privately owned firearms during domestic violence cases - Handled transfer of firearms between customers and out of State transactions.

Peter D. Villani
Firearms Background

- Responsible for keeping updated on all firearms laws and regulations
- Awarded Blue Ribbon Award for Shot Business Publication as a target of an undercover shopper

1996-2005	NRA Certified Range Safety Officer
2002	Department Firearms Instructor/Armorer certification in Beretta 92. Managed maintenance and repair of the entire Department weapon inventory.
2012	Simunition Firearms Instructor. I taught Department personnel in tactical awareness and proper use of issued sidearms.
2013	Sig Sauer 229-239 Instructor/Armorers Course/Beretta 92 Armorers Recertification course.
2016	AR15/M16 Long gun Instructor course/Armorers Course. Managed maintenance and repair of the entire Departments rifle Inventory and training of Officers in the proper use of the AR15 rifle system.
2019	AR 15/16 Armorers recertification Course
2019	Firearms Instructor recertification Course
2019	Armorers recertification Course Beretta 92, Sig Sauer 239/229
2020	Sig Sauer P-320 armorers course certification

Peter D. Villani
Certifications

Manchester Regional High School 70 Church Street Haledon, NJ	Industrial Arts Program	1978
Lethal Force Institute	Stress Fire Handgun	1986
Lethal Force Institute	Advanced Combat Shotgun	1986
NJ Department of Law & Public Safety Passaic County Police Academy	Class 2 Special Officer	1987
NJ Department of Law & Public Safety Morris County Police Academy	Basic Course for Police Officers	1989
NRA	Police Expert	1989
Dept. Of Veterans Affairs Law Enforcement Training Center 2200 Fort Root Rd. North Little Rock Arkansas	Basic Police Officer	2001
Dept. Of Veterans Affairs Law Enforcement Training	Firearms Instructor	2002
Beretta	Armorer Training	2002
VA Employee Education System	Prevention and Management of Disruptive Behavior: Train the Trainer	2003
IES Interactive Training	Certified Instructor/Operator	2003
Kustom Signals, Inc.	Doppler Traffic Radar Instructor	2003
Dept. Of Veterans Affairs	Special Contribution Award (Firearms)	2005
NRA	Certified Pistol Instructor/Range Safety Officer	2005
Dept. Of Veterans Affairs	Supervisory Training Program	2008
Simunition Certification Picatinny Arsenal, Wharton NJ	Simunition Scenario Instructor/ Safety CertificationCourse	2009
Dept. Of Veterans Affairs	Advanced Patrol Officer Training	2011
Dept. Of Veterans Affairs	Supervisory Police Officer Training	2011
Dept. Of Veterans Affairs	Evidence Custodian	2013
Dept. Of Homeland Security	IED Search Procedures	2014

Ridgefield Park Police Dept.	Conducting Complete Traffic Stops	2014
Dept. Of Veterans Affairs	Advanced Patrol Officer	2016
Dept. Of Veterans Affairs	Firearms Instructor	2016
Dept. Of Veterans Affairs	Instructor Development	2016
Dept. Of Veterans Affairs	Police Long Gun	2016
Windham Weaponry	AR15/M16 Armorer	2016
Public Agency Training Council	Leadership Skills for Challenging Times	2017
Dept. Of Veterans Affairs	LETC Chief's Symposium	2017
Dept. of Veterans Affairs	Evidence Custodian II	2018
Dept. Of Veterans Affairs	Firearms Instructor - Recert	2019
Dept. Of Veterans Affairs	Police Long Gun - Recert	2019
Windham Weaponry	AR15/M16 Armorer - Recert	2020
Sig Sauer	Sig Sauer P-320 Armorer training	2020

CONFIDENTIAL – SUBJECT TO PROTECTIVE ORDER – ATTORNEY'S EYES ONLY

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Case 1:21-cv-11007-DJC Document 151-12 Filed 04/05/24 Page 23 of 28

SIG SAUER® ACADEMY

Certificate of Achievement

This is to certify that

Peter Villani

has successfully completed the course of instruction in

SIG SAUER P320 Armorer Certification

and is awarded this certificate in recognition thereof.

Director, SIG SAUER Academy
Steven Gilcreast

September 1, 2020
Expires September 2, 2023

Chief Training Officer
Scott Reidy

SIG SAUER®
ACADEMY

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Director, SIG SAUER Academy
Steven Gilcreast

September 1, 2020
Expires September 2, 2023

Chief Training Officer
Scott Reidy

Department of Veterans Affairs

Law Enforcement Training Center

Certificate of Training

is awarded to

Peter Villani

for Satisfactory Completion of the Course

40 Hour Advanced Patrol Officer Training Course
January 3 – January 7, 2011
Given at the Department of Veterans Affairs
Law Enforcement Training Center.

Director, Law Enforcement Training Center

Deputy Assistant Secretary
for Security and Law Enforcement

VA FORM 0006a (588)
FEB 2009

CONFIDENTIAL – SUBJECT TO PROTECTIVE ORDER – ATTORNEY'S EYES ONLY

Department of Veterans Affairs

Law Enforcement Training Center

Certificate of Training

is awarded to

Peter Villani

for Satisfactory Completion of the Course

40 hour Supervisory Police Officer Training Course
June 27 – July 1, 2011

Given at the Department of Veterans Affairs
Law Enforcement Training Center.

Director, Law Enforcement Training Center

Deputy Assistant Secretary
for Security and Law Enforcement

VA FORM 0006a (598)
FEB 2009

Department of Veterans Affairs

Law Enforcement Training Center

Certificate of Training

is awarded to

PETER VILLANI

for Satisfactory Completion of the Course

24 Hour Evidence Custodian Course
February 5 – February 7, 2013

Given at the Department of Veterans Affairs
Law Enforcement Training Center.

Director, Law Enforcement Training Center

Deputy Assistant Secretary
for Security and Law Enforcement

A FLETA ACCREDITED ACADEMY

VA Form 0006a (598)
Feb 2009

Schedule A

Prior testimony:

Guay v. Sig Sauer, Inc., No. 1:2020cv00736 (D.N.H.)

(deposition and jury trial)

Jinn v. Sig Sauer Inc., 1:20-cv-01122 (S.D.N.Y.)

(deposition)

Hilton v. Sig Sauer, Inc., 1:2021cv00441 (E. Dist. Tx.)

(deposition)

Ahern v. Sig Sauer, Inc., 21-cv-11007 (D. Mass.)

(deposition)